

What is claimed is:

1. A pavement marking comprising a plurality of retroreflective elements partially embedded in a binder wherein the retroreflective elements have an exposed outer viewing surface comprising retroreflective sheeting and a layer beneath the viewing surface comprising a shrunk film layer.

2. The pavement marking of claim 1 wherein a cross-section of at least a portion of the retroreflective elements comprises an edge of the sheeting in a shape of at least one coil.

3. The pavement marking of claim 1 wherein a cross-section of at least a portion of the retroreflective elements comprises an edge of the sheeting in a substantially circular shape.

4. The pavement marking of claim 1 wherein at least a portion of the retroreflective elements comprise an outside diameter ranging from about 0.5 mm to 4 mm.

5. The pavement marking of claim 1 wherein at least a portion of the retroreflective elements comprise a substantially solid core.

6. The pavement marking of claim 1 wherein at least a portion of the retroreflective elements comprise a cavity.

7. The pavement marking of claim 6 wherein the cavity is discontinuous.

8. The pavement marking of claim 7 wherein the cavity of at least a portion of the retroreflective elements is at least partially filled with the binder.

9. The pavement marking of claim 1 wherein the retroreflective sheeting is selected from the group comprising exposed-lens sheeting and enclosed-lens sheeting.

10. The pavement marking of claim 9 wherein the retroreflective sheeting is exposed-lens sheeting comprising a specular reflective coating spaced apart from a monolayer of optical elements.

11. The pavement marking of claim 1 wherein the retroreflective sheeting comprises optical elements selected from glass microspheres, glass-ceramic microspheres, and cube corner elements.

12. The pavement marking of claim 11 wherein the optical elements are at least partially embedded in a polymeric layer.

13. The pavement marking of claim 11 wherein the optical elements are selected from transparent microspheres, colored transparent microspheres, and microspheres having a specular reflecting coating.

14. The pavement marking of claim 1 wherein the shrunk film is selected from the group consisting of heat shrinkable film and elastomeric film.

15. The pavement marking of claim 14 wherein the heat shrinkable film comprises a cross-linked semi-crystalline polymer.

16. The pavement marking of claim 1 further comprising at least one of the group comprising other retroreflective elements, optical elements, skid particles, and combination thereof.

17. A retroreflective element comprising an exposed outer viewing surface comprising retroreflective sheeting and a layer beneath the viewing surface comprising a shrunk film layer.

18. The retroreflective element of claim 17 wherein the element comprises a substantially solid core.

19. The retroreflective elements of claim 17 wherein the element is at least partially filled with at least one material selected from the shrinkable film, a filament, a polymeric material, and combinations thereof.
- 5 20. A retroreflective article comprising the retroreflective elements of claim 17 at least partially embedded in a binder.
21. The retroreflective article of claim 17 wherein the article is retroreflective sheeting.
- 10 22. The retroreflective article of claim 17 wherein the article is selected from the group consisting of signs, tapes, personal safety apparel, and traffic devices.
23. A surface comprising a plurality of the retroreflective elements of claim 17 partially embedded in a binder.
- 15 24. A laminate comprising retroreflective sheeting having a viewing surface and an opposing surface and a shrinkable layer permanently bonded to the opposing surface of the sheeting.
- 20 25. The laminate of claim 24 wherein the unconstrained shrinkable layer shrinks about 150%.
26. A method of making retroreflective elements comprising:
providing a laminate comprising retroreflective sheeting having a viewing surface and an
25 opposing surface and a shrinkable layer attached to the opposing surface of the sheeting;
and
shrinking the shrinkable film layer.
27. The method of claim 26 further comprising cutting the retroreflective sheeting before
30 attaching the shrinkable film layer, after attaching the shrinkable film layer, after
shrinking, and combinations thereof.

28. The method of claim 27 wherein attaching the shrinkable film layer to the sheeting is selected from bonding the film with an adhesive, bonding the film with heat lamination, chemical grafting to film to the sheeting, and combination thereof.